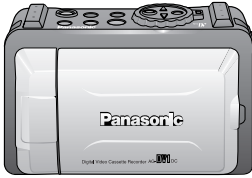


Panasonic®



Digital Video Cassette Recorder Operating Instructions

Model No. AG-DV1 DC E



Mini **DV**

Before attempting to connect, operate or adjust this product, please read these instructions thoroughly.

Information For Your Safety

Dear Customer,

We would like to take this opportunity to thank you for purchasing this Panasonic Digital Video Cassette Recorder. Please read these Operating Instructions carefully and keep them handy for future reference.

Information for Your Safety

WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE ONLY THE RECOMMENDED ACCESSORIES AND DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Carefully observe copyright laws.

Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

- Please note that the actual controls and components, menu items, etc. of your Digital Video Cassette Recorder may look somewhat different from those shown in the illustrations in these Operating Instructions.
- Other names, company names, and product names printed in these instructions are trademarks or registered trademarks of the companies concerned.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

THE SOCKET OUTLET SHOULD BE INSTALLED NEAR THE EQUIPMENT AND SHOULD BE EASILY ACCESSIBLE.

As this equipment gets hot during use, operate it in well ventilated place; do not install this equipment in a confined space such as a bookcase or similar unit.

To reduce the risk of fire, electric shock or product damage, do not expose this equipment to rain, moisture, dripping or splashing and ensure that no objects filled with liquids, such as vases, shall be placed on the equipment.

Digital Video Cassette Recorder

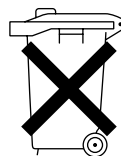
- The rating plate is on the underside of the Digital Video Cassette Recorder.

AC Adaptor

- The rating plate is on the underside of the AC Adaptor.
- Disconnect the AC mains plug from the AC mains socket when not in use.

Attention/Attentie

- Batteries are used for the main power source and memory back-up in the product. At the end of their useful life, you should not throw them away. Instead, hand them in as small chemical waste.
- Voor de primaire voeding en het reservegeheugen van het apparaat wordt gebruikgemaakt van een batterij.
Wanneer de batterij is uitgeput, mag u deze niet gewoon weggooien, maar dient u deze als klein chemisch afval weg te doen.



Caution for AC Mains Lead

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.

Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

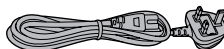
FOR CONTINENTAL EUROPE, ETC.

Not to be used in the U.K.



FOR U.K. ONLY

If the plug supplied is not suitable for your socket outlet, it should be cut off and appropriate one fitted.





FOR U.K. ONLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amp and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.


If in any doubt please consult a qualified electrician.

WARNING :THIS APPLIANCE MUST BE EARTHED.

IMPORTANT :The wires in this mains lead are coloured in accordance with the following code:

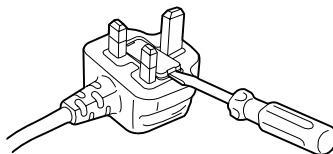
Green-and-Yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured mark-ings identifying the terminals in your plug, proceed as follows:

- The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the Earth symbol  or coloured GREEN or GREEN-AND-YELLOW.
- The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.
- The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

How to replace the fuse

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse.

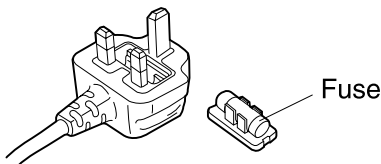


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Before Use

Playback Features

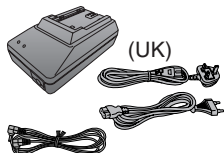
Recording Features

For Your Information

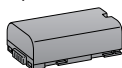
Before Using

Accessories

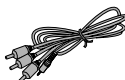
1 pc. AC Adaptor
(DE-811D) with AC
Cable and DC Cable



1 pc. Battery Pack
(CGR-D08/CGR-
D08R)



1 pc. A/V Cable



1 pc. SCREW Unit



Note

- Use only the supplied SCREW Unit. (p. 25)

Record Speed/Playback Time

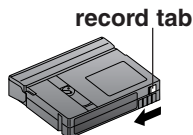
Use only those tapes having the Mini **DV** logo indicating the 6.35 mm digital standard.

Record Speed/Playback time	
SP	LP
30 minutes	45 minutes
60 minutes	90 minutes
80 minutes	120 minutes

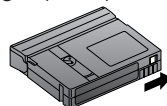
Erase Protection

Cassettes have a sliding record tab to ensure recordings are not accidentally erased.

- To prevent accidental erasure:**
Slide the tab to the left (open).

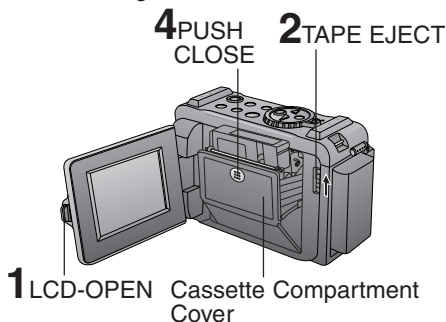


- To record again:**
Slide the tab to the right (close).



Easy Cassette Eject/Insertion

- If this unit is connected to a power source, the cassette can be inserted and ejected without turning this unit on.



Before you begin

- Connect this unit to a power source. (pp. 9, 10)

- 1 Press LCD-OPEN** to unlock the LCD monitor, and **swing it fully open**.
- 2 Slide TAPE EJECT** to open the Cassette Compartment Cover.
- 3 Insert a cassette** record tab up, window side facing out.
- 4 Press PUSH CLOSE** to close the Cassette Compartment Cover.

•To remove the cassette...

Slide TAPE EJECT to open the Cassette Compartment Cover and pull the cassette tape straight out.

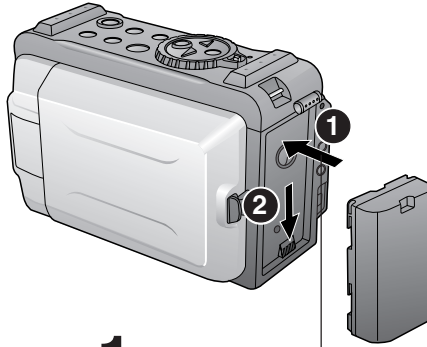
Note

- When inserting the cassette, make sure it is facing in the right direction and then push it in completely.

Insert the Battery Pack

Before you begin

- Charge the Battery. (p. 9)



- 1 Insert the Battery Pack** and slide it down until it locks with a click.

Insert Cassette

- 1 Press LCD-OPEN** to unlock the LCD monitor, and **swing it fully open**.
- 2 Set POWER to ON** while pressing the white button.
 - The POWER Lamp lights red.
- 3 Slide TAPE EJECT** to open the Cassette Compartment Cover.
- 4 Insert a cassette** record tab up, window side facing out.
 - Make sure the record tab is closed. (p. 6)
- 5 Press PUSH CLOSE** mark to close the Cassette Compartment Cover.

WARNING:

- Do not lift, or carry, this unit by the LCD Monitor.

CAUTION:

To protect the VTR and tapes, avoid use in dusty and dirty locations. It is also recommended that the unit be used with the LCD closed. (It is possible to close the LCD with the display facing into the unit or away from the unit.)

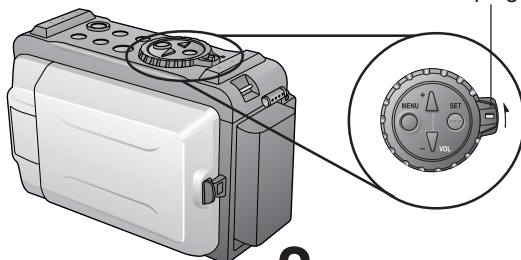
Quick Guide

Make a Recording

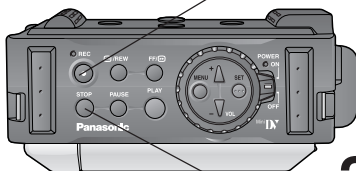
Before you begin

- Charge the Battery. (p. 9)

- 1 Set POWER to ON** while pressing the white button.
 - The POWER Lamp lights red.



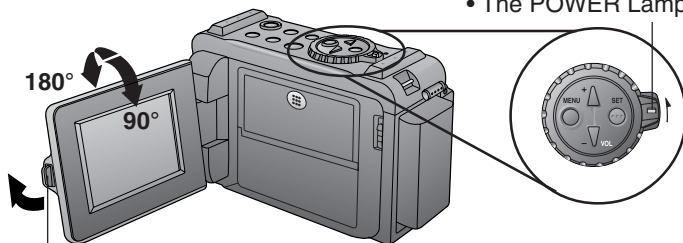
- 2 Press ● (REC)** to start recording.



- 3 Press ■ (STOP)** to stop recording.

Playback a Tape

- 1 Set POWER to ON** while pressing the white button.
 - The POWER Lamp lights red.



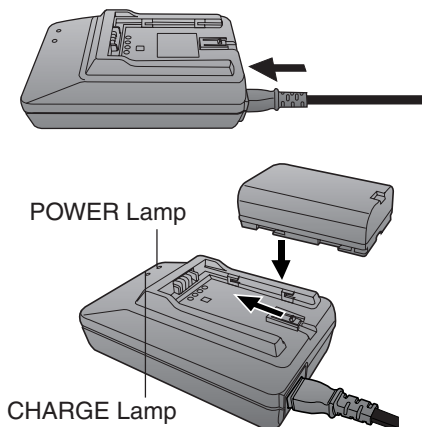
- 2 Press LCD-OPEN** to unlock the LCD monitor. **Swing it fully open and adjust the angle.**

- 3 Press ◀◀ (REW)** to rewind the tape.



- 5 Press ■ (STOP)** to stop playback.
- 4 Press ▶▶ (PLAY)** to start playback.

Charge the Battery Pack on the AC Adaptor



1 Connect and plug in the Power Cord as shown.

- POWER Lamp will light.
- Remove the DC Cable, if attached, from the adaptor.

2 Attach the Battery as shown to charge.

- CHARGE Lamp lights up. It goes out when charging is complete (approx. 1 hour). Expect approx. 2 hours (LCD monitor is closed.) of operation when fully charged.

3 Remove the Battery. Slide the Battery out and then lift up.

Note

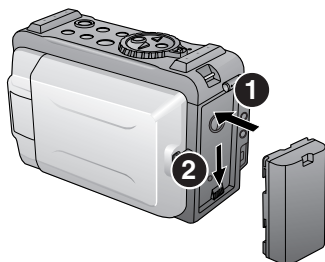
About the Flashing of the CHARGE Lamp

- Charge the Battery within an ambient temperature range of 10 °C and 30 °C.
- If charging is done in extreme low or high temperatures, Battery charge time increases.

CHARGE Lamp flashes when...

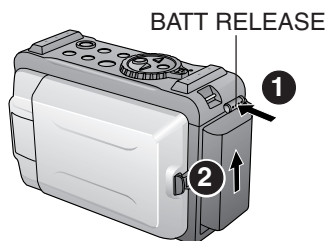
- The Battery is being charged, but charging is taking longer than normal.
- Charging is not possible. Remove the Battery once, wait a short time, then re-attach it for charging.

Insert the Battery Pack



1 Insert the Battery Pack and slide it down until it locks with a click.

Remove the Battery Pack



1 Remove the Battery Pack and slide the Battery upward while pushing the BATT RELEASE.

Supplying Power

Battery Care

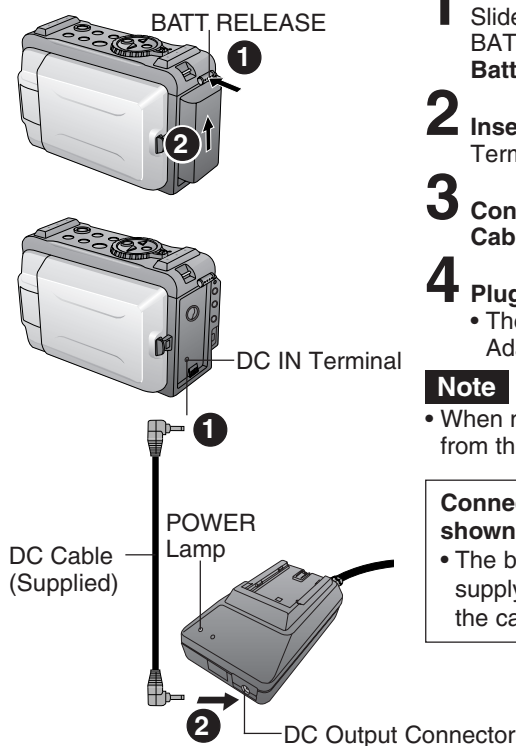
Caution:

- Charge only with specified charger.
- Charge the Battery within an ambient temperature range of 10 °C and 30 °C.
- The Battery may be warm after charging or just after use. This is normal.
- Do not use an insufficiently charged or worn out Battery.
- If charging is done in extreme low or high temperatures, Battery charge time increases.

Safety precautions:

- Do not place the Battery near, or dispose of in fire.
- Do not directly connect (short circuit) the positive (+) and negative (–) terminals.
- Never attempt to disassemble or reassemble the Battery.

Use AC Adaptor



To avoid damage to the Battery:

- Do not drop or jar the Battery.
- Use the Battery with specified models only.
- If the Battery is used in extremely high temperatures, a safety device will automatically prevent operation.

To ensure longer battery life:

- **While not in use, remove Battery from this unit and AC Adaptor and store in a cool, dark, dry place.** If you leave the Battery in this unit or on the AC Adaptor, the Battery will no longer be rechargeable.
- Keep the Battery terminals clean.

1

Slide the Battery upward while pushing BATT RELEASE to **remove the Battery Pack.** (p. 9)

2

Insert the **DC Cable** into the DC IN Terminal.

3

Connect the other end of the **DC Cable** to the AC Adaptor as shown.

4

Plug in the **AC Adaptor**.

- The **POWER Lamp** on the AC Adaptor lights up.

Note

- When not in use, unplug the AC Adaptor from the AC outlet.

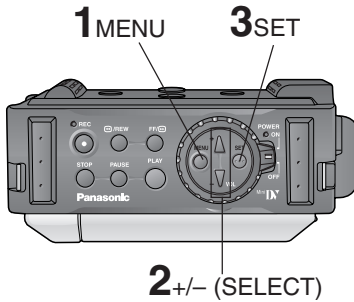
Connect the AC Adaptor correctly as shown in the figure.

- The battery cannot be charged while supplying power from the AC Adaptor to the camera recorder.

Setting the Clock

Set the Date and Time

The date and time is calculated, including leap year, up to 31.12.2089.



EXAMPLE:

YEAR	: 2003		
		SET	Push
	↓		
MONTH	: 1		
		+ / -	Push
	↓		
MONTH	: 2		

Note

- To make corrections, Press SET repeatedly to move back to an item and correct.
- A built-in Battery maintains clock operation. If this unit is not connected to a power source for a few months, the built-in battery may discharge and "CLOCK BATTERY" indication appears. (p. 28)

Before you begin

- Connect this unit to a power source. (pp. 9, 10)
- Set POWER to ON while pressing the white button.

- 1 Press MENU** to display the MAIN MENU screen. (p. 12)



- 2 Press +/-** to select **CLOCK SET**, and then **press SET** to display the DATE/TIME SETTING menu screen.

- 3 Press SET** to select YEAR, then **press +/-** to set. **Press SET** to move to the next item. Likewise, set the month, day, hour, and minutes.



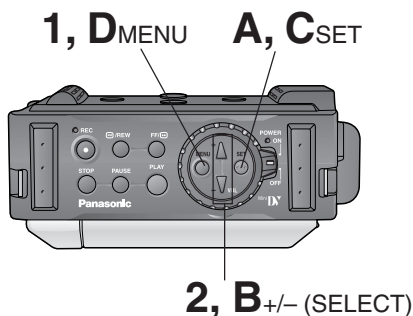
When DATE/TIME setting is completed, press MENU twice to start the clock and exit.

Using the Menu

- While the Menu screen is displayed, you cannot record on or play a tape.
- While recording, the Menu screen cannot be displayed.
- During playback, the Menu screen can be displayed.

Before you begin

- Connect this unit to a power source. (pp. 9, 10)
- Set POWER to ON while pressing the white button.



Displaying the MENU

- 1** Press **MENU** to display the MAIN MENU screen.
- 2** Press **+/-** to select a menu item.

Setting the MENU Items

- A** Press **SET** to set your selection.
- B** Press **+/-** to select a menu item.

REC. MODE	
REC. SPEED	LP
AUDIO DUB	OFF
AUDIO REC	12bit
AV JACK	OUT/PHONES
AUDIO SEL	LINE
. SELECT : PUSH +/- KEY	
. SET : PUSH SET KEY	
. EXIT : PUSH MENU KEY	

REC. MODE	
REC. SPEED	LP
AUDIO DUB	OFF
AUDIO REC	12bit
AV JACK	OUT/PHONES
AUDIO SEL	LINE
. SELECT : PUSH +/- KEY	
. SET : PUSH SET KEY	
. EXIT : PUSH MENU KEY	

- C** Press **SET** to set your selection.
 - The “●” mark indicates selection.
- D** Press **MENU** twice to exit the menu.

MAIN MENU

1 : REC MODE

To select REC SPEED, AUDIO DUB, AUDIO REC, AV JACK, or AUDIO SEL.

2 : PLAYBACK MODE

To select COLOUR MODE, AUDIO, or B.SEARCH.

3 : REMOTE

To select CONTROL MODE or REMOTE MODE.

4 : DISPLAY

To select DISPLAY, LINE OUT, C.RESET, DATE/TIME, or COUNTER.

5 : LCD

To select LCD BRIGHTNESS or LCD COLOUR.

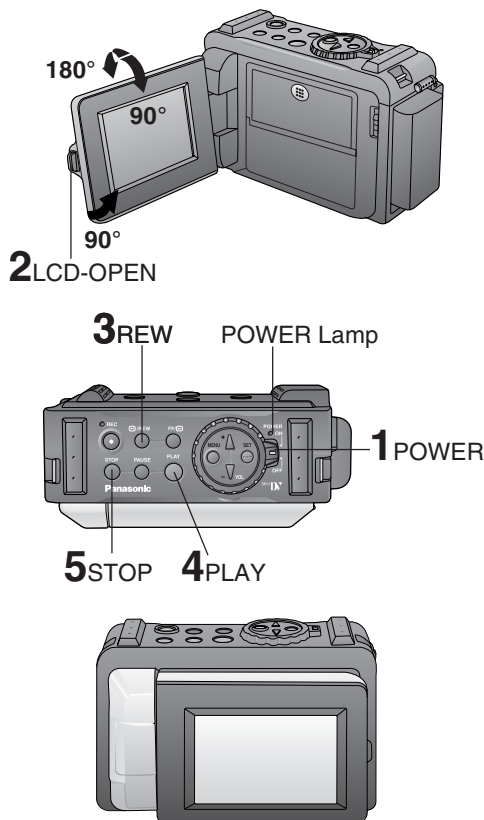
6 : CLOCK SET

To display DATE/TIME SETTING menu.

Playback Your Recordings

Basic Playback

You can playback your recording.



Before you begin

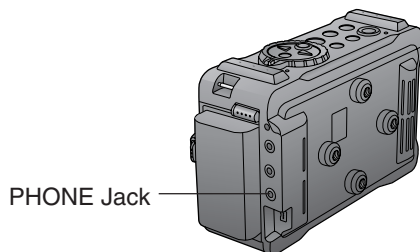
- Connect this unit to a power source. (pp. 9, 10)
- Insert a recorded cassette.

- 1 Set the POWER to ON** while pressing the white button.
 - The POWER lamp lights red.
 - Be sure POWER is fully turned to the ON position.
- 2 Press LCD-OPEN** to unlock the LCD monitor and swing it fully open.
- 3 Press ◀ (REW)** to rewind the tape.
- 4 Press ▶ (PLAY)** to start playback.
- 5 Press ■ (STOP)** to stop playback.
 - When the tape reaches its beginning during rewind or rewind search, it will stop automatically.

Note

- When a tape recorded in LP mode on another digital video camera is played back on this unit, the picture may appear mosaic.
- Using the LCD monitor reduces battery operating time.
- You can place this unit on a table, etc. for viewing. Rotate the LCD Monitor 180° and swing it up against this unit body as shown.

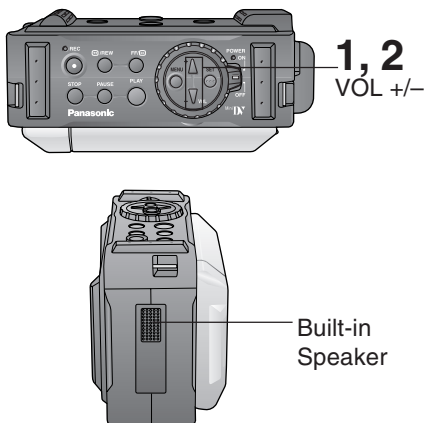
Connecting Earphone (not supplied)



You can connect earphones (not supplied) to the PHONE Jack.

Playback Your Recordings

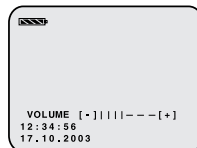
Adjusting the Volume



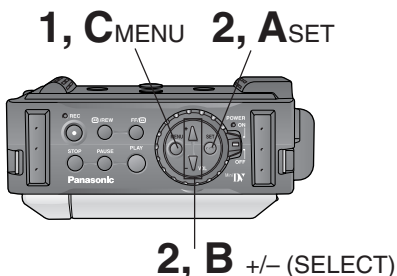
- 1 Hold down **VOL +/-** for more than 0.5 second to adjust the volume of the built-in speaker in **PLAY** mode.
 - The volume setting screen appears.

- 2 Press **“+”** to increase the volume or press **“–”** to decrease the volume.

LCD Monitor



To adjust the LCD BRIGHTNESS or COLOUR



Displaying the MENU

- 1 Press **MENU** to display the **MAIN MENU** screen.
- 2 Press **+/-** to select **LCD**, then press **SET** to display the **LCD** screen.

Setting the LCD

- A Press **SET** to select **LCD BRIGHTNESS** or **LCD COLOUR**.
(Menu OSD: p. 30)

- B Hold down **+/-** for more than 0.5 second to adjust.

- C Press **MENU** twice to exit the menu.

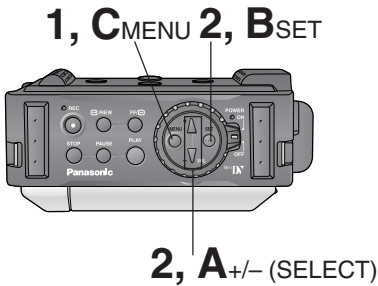
LCD Monitor



Playback Your Recordings

COLOUR Mode

You can select colour (ON) or mono (OFF) playback with this feature.



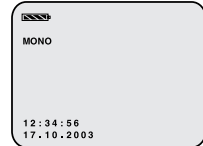
Displaying the MENU

- 1 Press **MENU** to display the MAIN MENU screen.
- 2 Press **+/-** to select **PLAYBACK MODE**, then press **SET** to display the PLAYBACK MODE menu screen.

Setting the COLOUR mode

- A Press **+/-** to select **COLOUR MODE** in the PLAYBACK MODE menu. (Menu OSD: p. 29)
- B Press **SET** to select ON or OFF.
- C Press **MENU** twice to exit the menu.
 - “MONO” will appear on the screen when selecting OFF.

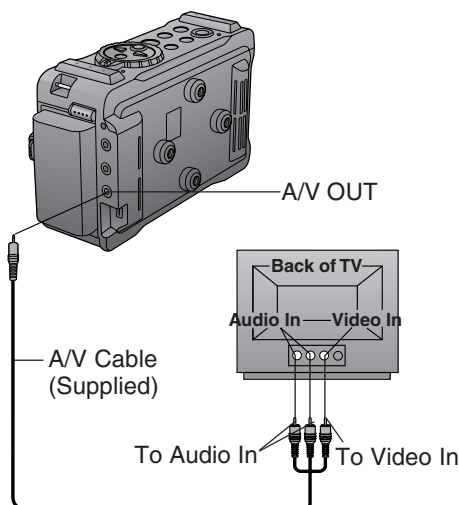
LCD Monitor



Playback Your Recordings

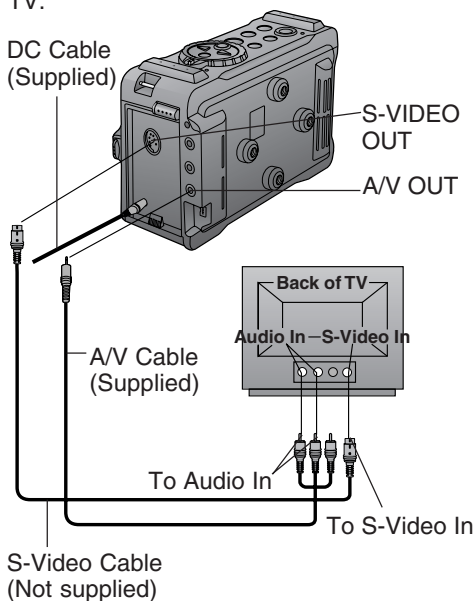
Playback on your TV

[TV with AUDIO/VIDEO IN Jacks]



[TV with S-VIDEO IN Jacks]

For best Chrominance and Luminance, use the S-Video connection if available on your TV.



Before you begin

- When using S-VIDEO Connector, insert the DC Cable into the DC IN Terminal. (p. 10)

- 1** Set **POWER** to **ON** while pressing the white button.
- 2** Press **MENU** to display the MAIN MENU screen.
- 3** Press **+/-** to select **REC MODE**, then press **SET** to display the REC MODE menu screen.
- 4** Press **+/-** to select **AV JACK** in the REC MODE menu. (Menu OSD: p. 29)
- 5** Press **SET** to select **OUT/PHONES**.
 - Press **MENU** twice to exit.
 - "DV IN" will appear on the screen. (p. 32)

Note

- Set **LINE OUT: ON** in the **DISPLAY** menu to display the OSD screen on your TV monitor.

- 6** Turn your TV **ON** and set it to **LINE INPUT** or **S-VIDEO**. Check your TV operating instructions for further information.

- 7** Start playback.

- Make sure this unit and TV are turned off while connecting.
- Please connect the A/V Cable securely.

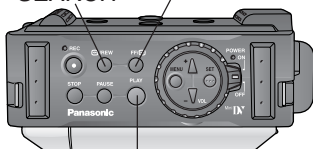
Special Effect Features

Note

- Sound is muted during all special effects.

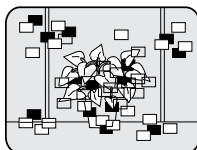
Rapid Visual Search

A, B REWIND/SEARCH **A, B** FAST FORWARD/SEARCH



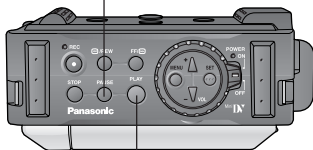
B PLAY

LCD Monitor



STILL Picture

1, 2 PAUSE

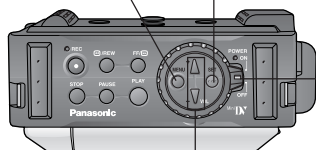


2 PLAY

Blank Search

You can go directly to a blank portion of tape and start recording exactly where you left off.

2 MENU **3, 5** SET



1 POWER

3, 4 +/- (SELECT)

LCD Monitor



A During playback, hold down **▶▶ (FAST FORWARD/SEARCH)** or **◀◀ (REWIND/SEARCH)**.

The search will continue for as long as the button is held down.

OR

B Press **▶▶ (FAST FORWARD/SEARCH)** or **◀◀ (REWIND/SEARCH)** once for a continuous rapid visual search.

Press **▶ (PLAY)** to release.

Note

- When executing a rapid visual search, the picture may become bluish for an instant or mosaic. This is normal during this mode.

1 Press **|| (PAUSE)** during playback.

2 Press **▶ (PLAY)** or **|| (PAUSE)** to release.

Note

- To protect the tape and video heads, your unit's operating modes will revert as follows:

STILL → STOP (after 3 minutes.)

1 Set **POWER** to **ON** while pressing the white button.

2 Press **MENU** to display the MAIN MENU screen.

3 Press **+/-** to select **PLAYBACK MODE**, then press **SET** to display the PLAYBACK MODE menu screen.

4 Press **+/-** to select **B.SEARCH** in the PLAYBACK MODE menu. (Menu OSD: p. 29)

5 Press **SET** to select **ON**.
• "BLANK" will appear on the screen.

Special Effect Features

Note

- Sound is muted during all special effects.

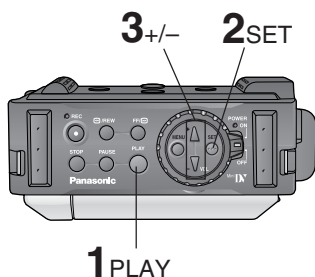
Fast Forward/Rewind Check

Monitor normal picture playback during fast forward or rewind.

- B** REWIND/SEARCH **A** FAST FORWARD/SEARCH



Variable Speed Search



- A** Hold down **▶▶** (**FAST FORWARD/SEARCH**) during fast forward.

- B** Hold down **◀◀** (**REWIND/SEARCH**) during rewind.

- The picture will appear for as long as the button is held down.

- 1** Press **▶** (**PLAY**) to start playback.
- 2** Hold down **SET** for more than 1 second.
- 3** Press **+/-** repeatedly to adjust the speed for forward or reverse playback.
 - Press **+** for forward playback.
 - Press **-** for reverse playback.

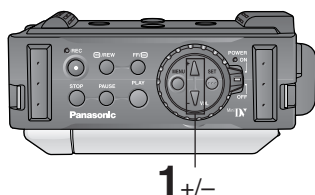
To return to normal playback:

Press **▶** (**PLAY**). Playback will continue at normal speed.

Note

- The Variable Speed Search function offers a choice of six playback speeds (1/5X (LP mode: 1/3X), 1X, 2X, 5X, 10X, 20X) both in forward and reverse directions.
- During the Variable Speed Search (except 1X speed in forward direction), mosaic-like patterns will appear in the picture.
- During the Variable Speed Search, sound is muted.

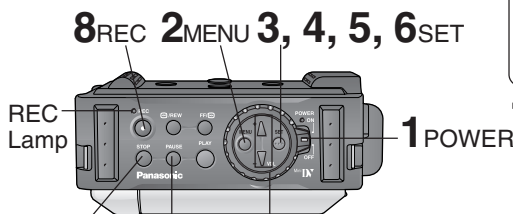
Frame Search



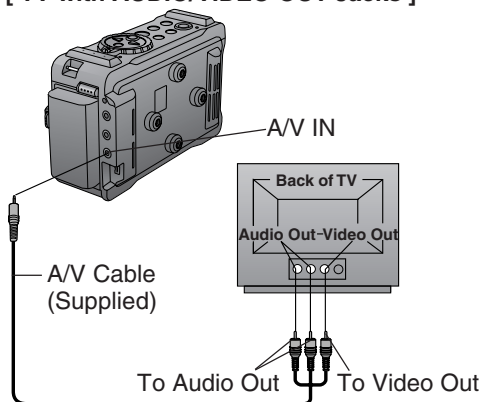
- 1** During Still mode, press **+/-** to advance or reverse the picture one frame at a time.

Basic Recording

Basic Recording

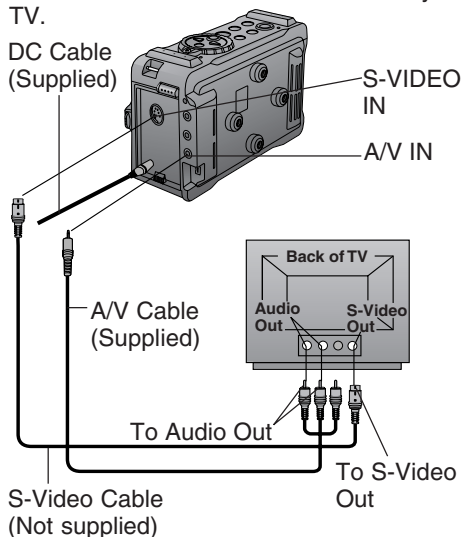


10 STOP 9 PAUSE 3, 4, 5, 6 +/- (SELECT)
[TV with AUDIO/VIDEO OUT Jacks]



[TV with S-VIDEO OUT Jacks]

For best Chrominance and Luminance, use the S-Video connection if available on your TV.



Before you begin

- Connect this unit to a power source. (pp. 9, 10)
- Insert a cassette with the record tab closed. (p. 6)

- 1 Set the POWER to ON** while pressing the white button.
 - The POWER lamp lights red.
 - Be sure POWER is fully turned to the ON position.
- 2 Press MENU** to display the MAIN MENU screen.
- 3 Press +/-** to select **REC MODE**, then press **SET** to display the REC MODE menu screen.
- 4 Press +/-** to select **AV JACK** in the REC MODE menu. Press **SET** to select IN. (Menu OSD: p. 29)
- 5 Press +/-** to select **AUDIO SEL**, then press **SET** to select LINE.
 - "LINE AV IN" will appear on the screen. (p. 32)
- Note**
 - Set LINE OUT: ON in the DISPLAY menu to display the OSD screen on your TV monitor.
- 6 Press +/-** to select **REC SPEED** in the REC MODE menu. Press **SET** to select "SP" or "LP". (Menu OSD: p. 29)
 - Press MENU twice to exit.
- 7 Turn your TV ON and set it to LINE INPUT or S-VIDEO.**

Check your TV operating instructions for further information.
- 8 Press ● (REC)** to start recording.
 - The REC Lamp lights red.
- 9 Press II (PAUSE)** to pause.
- 10 Press ■ (STOP)** to stop recording.

Note

- If left in Record/Pause for 5 minutes, this unit will automatically go into Stop mode.
- Make sure this unit and TV are turned off while connecting.
- Please connect the A/V Cable securely.

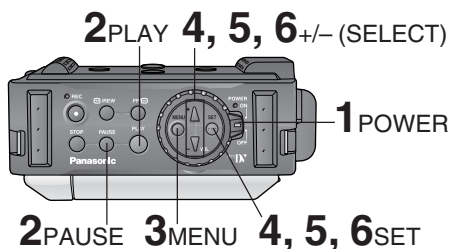
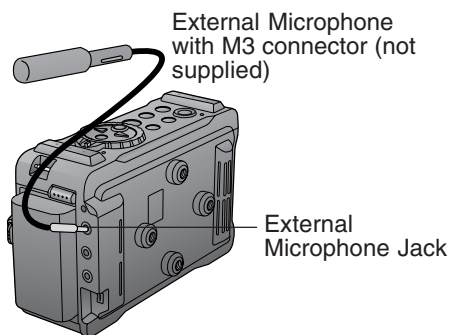
Recording Features

Audio Dubbing using the External Microphone or External Recording Source

The original sound can be replaced with new sound using an external microphone or external recording source.

12 bit	The original sound is recorded on ST (Stereo) 1, and the new sound will be recorded on ST (Stereo) 2.
16 bit	The original sound is replaced with the new sound.

- Select 12 bit if you do not want the original sound to be completely replaced during an audio dub.
- With tape containing both 12 bit and 16 bit audio, please note that if dubbing is started in a 16 bit portion, the 12 bit audio will also be completely replaced.



Before you begin

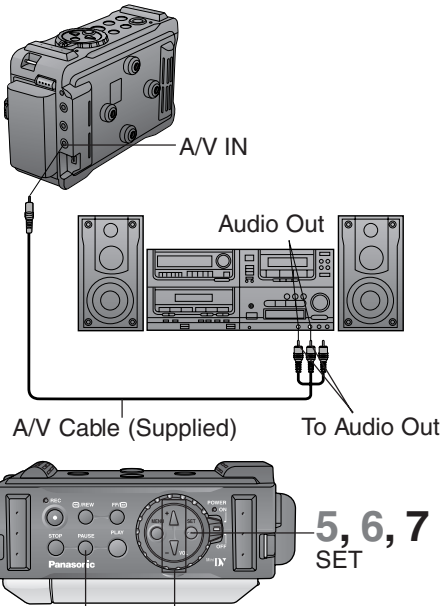
- Connect the external Microphone (if used).
- Connect this unit and the external recording source using the A/V Cable. (if used).
- Turn this unit on.
- Insert a pre-recorded tape to be dubbed.

- 1** Set **POWER** to **ON** while pressing the white button.
- 2** Press **▶ (PLAY)**. Then press **II (PAUSE)** where you want dubbing to begin.
- 3** Press **MENU** to display the MAIN MENU screen.
- 4** Press **+/-** to select **REC MODE**, then press **SET** to display the REC MODE menu screen.

When using an External Microphone

- 5** Press **+/-** to select **AV JACK**, then press **SET** to select **OUT/PHONES** or **IN**.
 - When **OUT/PHONES** is selected, **AUDIO SEL** is automatically set to **MIC**.
- 6** Press **+/-** to select **AUDIO SEL**, and then press **SET** to select **MIC**.
 - Go to step 7 on page 21.

Recording Features



8, 9 PAUSE 5, 6, 7 +/- (SELECT)

To listen to the desired audio sound, set the AUDIO setting of the PLAYBACK MODE menu (Menu OSD: p. 29) as follows:

AUDIO: The following selections are available for 12 bit AUDIO dubbed recordings only (sound recorded in SP mode only).

ST 1	Set this position to listen to the original sound.
ST 2	Set this position to listen to the audio dubbed sound.
MIX	Set this position to listen to both the original sound and the audio dubbed sound.

Note

- When a 16 bit recording is dubbed over, the original audio of the recording will be erased.
- When a 12 bit recording is dubbed over and played back, and MIX is selected as the AUDIO, both the original audio and the dubbed audio are played back.
- If you recorded in LP mode, you cannot use the A.DUB feature.

When using an External Recording Source

Follow the steps 1~4 on page 20.

5 Press +/- to select **AV JACK**, then press **SET** to select IN.

6 Press +/- to select **AUDIO SEL**, and then press **SET** to select LINE.

7 Press +/- to select **AUDIO DUB**, and then press **SET** to select ON.

- This unit will go to Stand By mode, and "A.DUB II" indication appears in the LCD monitor.
- "LINE A IN" (LINE) or "MIC IN" (MIC) will appear in the LCD monitor. (p. 32)

8 Press **II (PAUSE)** to start Audio Dubbing.

Only PAL (Phase Line alternation) recorded tapes can be audio dubbed. The following screen appears if the tape was not recorded in PAL format.

INCOMPATIBLE
DATA

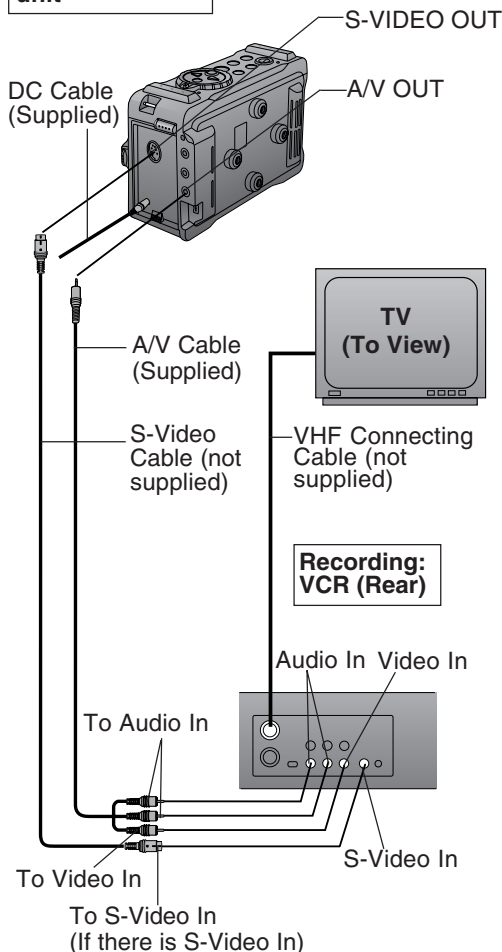
9 Press **II (PAUSE)** to stop Audio Dubbing.

- If the microphone used gets too near the speaker on your TV or on this unit, a howling noise (feedback) may occur. In this case, either move the mic farther away or turn the volume down. (p. 14)
- If the tape position is in or was started in a blank section, you cannot use the A.DUB feature.

Recording Features

Copying your Tapes to S-VHS or VHS Cassette

Source (Playing)
unit



Monitor with your TV

- Turn the TV ON and select its VCR channel (either CH3 or CH4).
- Set the VCR/TV Selector on the recording VCR to VCR.

Before you begin

- Connect this unit and VCR to their power sources.
- Connect this unit to a VCR as illustrated left.
- Turn both units on.
- **Set the recording VCR's Input Signal Selector to LINE.**
- Before using S-VIDEO Connector, insert the DC Cable into the DC IN Terminal. (p. 10)

- 1 Insert a pre-recorded tape** into the source (playing) unit and a blank tape, with record tab in place, into the target VCR (Recorder).
- 2 Press MENU** to display the MAIN MENU screen.
- 3 Press +/-** to select **REC MODE**, then **press SET** to display the REC MODE menu screen.
- 4 Press +/-** to select **AV JACK**, then **press SET** to select OUT/PHONES.
 - Press MENU twice to exit.
 - "DV IN" will appear on the screen.
- 5 Press ► (PLAY)** on this unit. When the tape reaches the point from which you want to start dubbing, **press PAUSE**.
- 6 Place the VCR into REC/PAUSE mode.** (See VCR manual.)
- 7 Simultaneously, press PAUSE** on both units to begin copying.
- 8 Press STOP on both units** when copying is completed.

Note

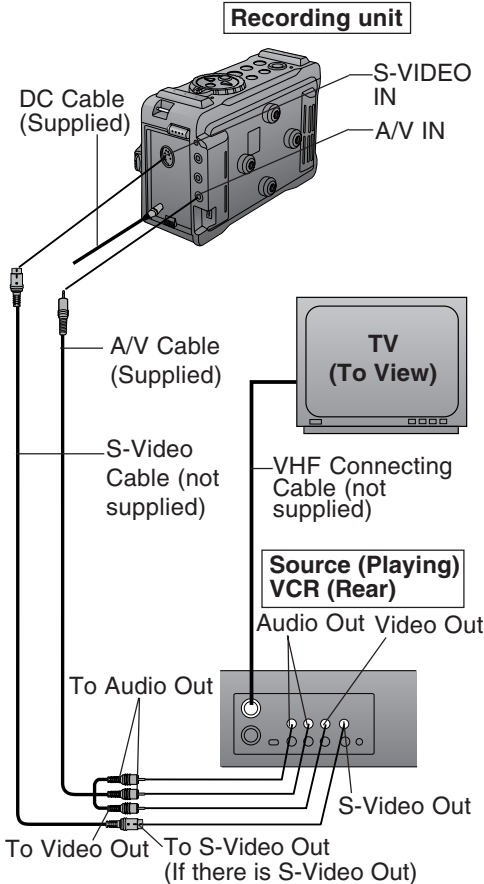
- For technical reasons, dubbing a tape may reduce its quality.
- If the Time Code is displayed in the LCD monitor, it cannot be reset.
- Only the DATE/TIME, when displayed, will be recorded on the tape.

CAUTION:

Unauthorised exchanging and/or copying of copyrighted recordings may be copyright infringement.

Recording Features

Copying S-VHS or VHS Cassette to your Tapes



Note

- Do not connect A/V with S-Video on a different unit. The picture and sound may be abnormal.
- If both S-Video Cable and A/V Cable are used, the picture will come from the S-Video Cable.
- Do not connect the A/V Cable and S-Video Cable to other devices.
- If a recording is made by the VCR while the counter is displayed, it cannot be reset.
- Depending on the input signal, the closed caption signal may not be able to be recorded normally.

Before you begin

- Connect this unit and VCR to their power sources.
- Connect this unit to a VCR as illustrated left.
- Turn both units on.
- Before using S-VIDEO Connector, insert the DC Cable into the DC IN Terminal. (p. 10)

- 1 Insert a pre-recorded tape** into the source (playing) VCR and a blank tape with recorded tab closed in place into this unit.
- 2 Press MENU** to display MAIN MENU screen.
- 3 Press +/-** to select **REC MODE**, then **press SET** to display the REC MODE menu screen.
- 4 Press +/-** to select **AV JACK**, then **press SET** to select IN.
- 5 Press +/-** to select **AUDIO SEL**, then **press SET** to select LINE.
 - Press MENU twice to exit.
 - "LINE AV IN" is displayed on the LCD monitor. (p. 32)
- 6 Press PLAY** on the VCR. When the tape reaches the point from which you want to start dubbing, **press PAUSE**.
- 7 First place this unit to play pause mode, and then press ● (REC)** for rec pause mode.
- 8 Simultaneously, press II (PAUSE)** on both units to begin copying.
- 9 Press ■ (STOP)** on both units when copying is completed.

CAUTION:

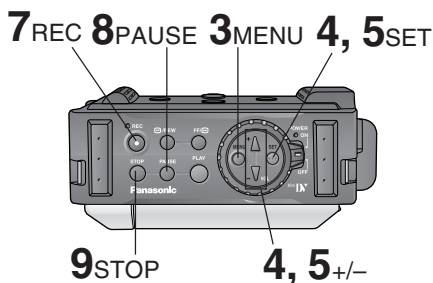
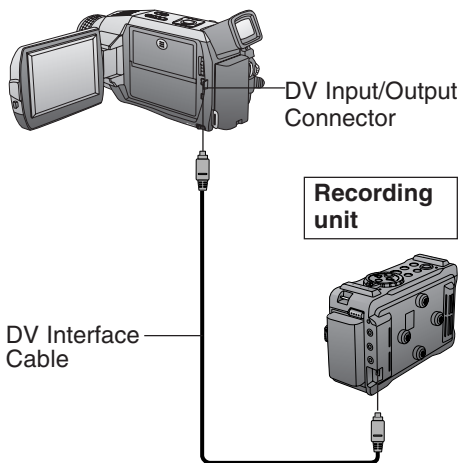
Unauthorised exchanging and/or copying of copyrighted recordings may be copyright infringement.

Recording Features

Copying from Digital Equipment (dubbing)

High quality digital-to-digital copying can be accomplished if this unit and a Palmcorder incorporate the DV Input/Output Connector (DV Interface cable is not supplied).

Source (Playing) unit



Before you begin

- Connect this unit and a source (Playing) unit to their power sources.
- Connect this unit and a source (Playing) unit using the DV Interface cable (4-pin to 4-pin).
- Turn both units on.

- 1** Insert a **pre-recorded tape** into the source (playing) unit, and set **POWER to VCR**.
- 2** Insert a **blank tape with the record tab closed** into the target (recording) unit and set **POWER to ON**.
- 3** Press **MENU** to display MAIN MENU screen.
- 4** Press **+/-** to select **REC MODE**, then press **SET** to display the REC MODE menu screen.
- 5** Press **+/-** to select **AV JACK**, then press **SET** to set to OUT/PHONES.
 - "DV IN" is displayed on the LCD monitor. (p. 32)
- 6** Press **▶ (PLAY)** on the source (Playing) unit. When the tape reaches the point from which you want to start dubbing, press **II (PAUSE)**.
- 7** First place the target (recording) unit to play pause mode and then press **● (REC)** to pause the tape at the starting point of the dub.
- 8** Simultaneously, press **II (PAUSE)** on both units to begin dubbing.
- 9** Press **■ (STOP)** on the recording unit, and then press **■ (STOP)** on the playing unit to end dubbing.

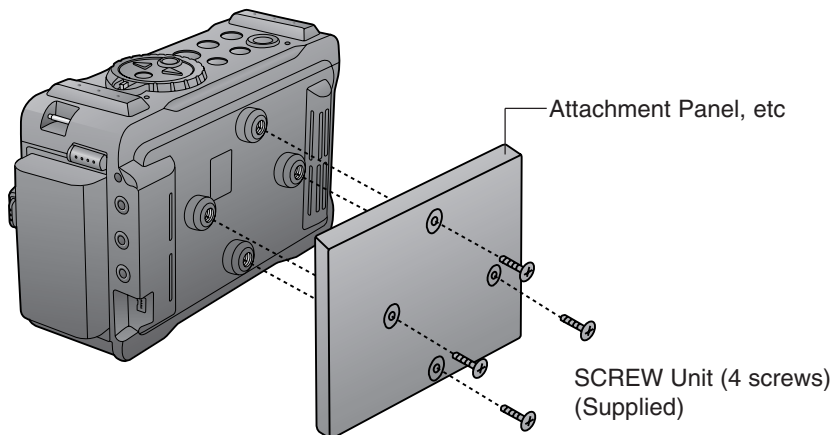
CAUTION:

Unauthorised exchanging and/or copying of copyrighted recordings may be copyright infringement.

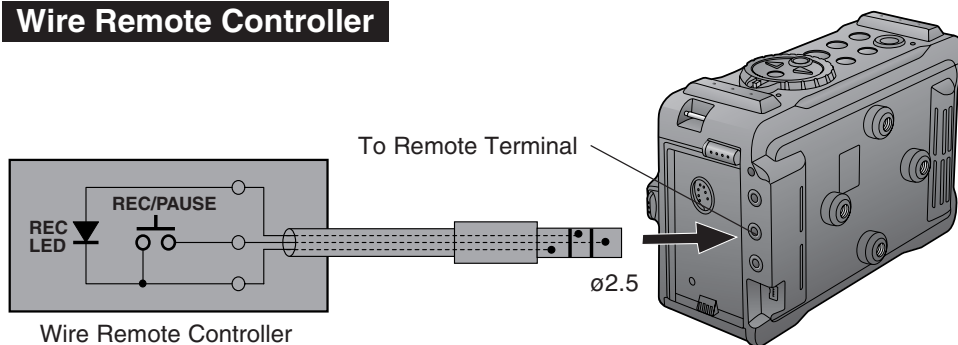
Notes On Operations

How to use SCREW Unit

Use only the supplied SCREW Unit when mounting the rear side of this unit to a rigid surface.



Wire Remote Controller



Note

- The REC LED lights up during REC Mode.
- The REC LED flashes during REC/PAUSE Mode.
- The REC LED lights out during other modes.
- When REC/PAUSE switch is closed from open, mode is changed.
- Refer to Menu OSD: p. 30.
- Please consult your local dealer.

Specifications

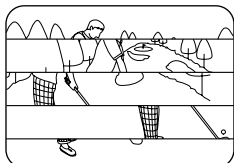
Power Source:	Digital Video Cassette Recorder : Input 7.9 V DC AC Adaptor: Input 100 - 240 V AC, 50/60 Hz, Output 7.9 V DC Battery: Lithium-Ion Type Output DC 7.2 V
Power Consumption:	Digital Video Cassette Recorder : 7.2 V/7.9 V DC 4.5 W (Rec mode) (MAX 6.5 W: Rew mode) AC Adaptor : 20 W
Digital Interface:	DV Input/Output Terminal (IEEE1394, 4-pin)
Video Signal:	EIA Standard (625 lines, 50 fields) PAL colour signal
Video Recording System:	2 rotary heads, helical scanning system
Video Output Level:	1.0 Vp-p, 75 ohm
S-Video Output Level:	Y Output: 1.0 Vp-p, 75 ohm C Output: 0.3 Vp-p, 75 ohm
Video Input Level:	1.0 Vp-p, 75 ohm
S-Video Input Level:	Y Input: 1.0 Vp-p, 75 ohm C Input: 0.3 Vp-p, 75 ohm
Audio:	12 bit (32 kHz) 4 tracks 16 bit (48 kHz) 2 tracks
Audio Output Level (Line):	-10 dBV Output Impedance 1 kohm Load Impedance 10 kohm
Audio Input Level (Line):	-10 dBV Input Impedance 47 kohm
Audio Input Level (Mic):	-70 dBV Input Impedance 5600 ohm Mic sensitivity -50 dB
LCD Monitor:	88.9 mm (3.5 inch) Liquid Crystal Display
Operating Temperature:	0 °C~40 °C
Operating Humidity:	10 %~75 %
Weight:	Digital Video Cassette Recorder : 0.5 kg AC Adaptor : 0.16 kg
Dimensions:	Digital Video Cassette Recorder : 143 (W) x 94.5 (H) x 69.7 (D) mm AC Adaptor : 70 (W) x 45 (H) x 115 (D) mm

Weight and dimensions shown are approximate.

Designs and specifications are subject to change without notice.

Before Requesting Service

Cleaning Care for Video Heads



Clogged Video Head

(a) Video Head Cleaning: Normally, your unit will not require head cleaning. However, it is possible that the heads may become clogged due to dust in the air, playing damaged tapes, long term use, etc. If "NEED HEAD CLEANING" appears for 5 seconds in the LCD monitor, the heads may require cleaning.

(b) Cleaning the Heads: It is recommended that head cleaning be performed by a qualified service technician. Please contact your nearest Panasonic Servicenter. An alternate solution is to obtain a head cleaning cassette. Please use Panasonic cleaning cassette (AY-DVMCLC). Be sure to follow the cleaning instructions carefully. Excessive use of the head cleaning cassette could shorten video head life.

Use this cassette only when a head clogging symptoms occur.

Refer servicing to qualified service personnel.

Tape Operations Caution







- When you go from function to function (PLAY, FF, REW etc.), please note that the unit will not accept a new function operation until the previous operation is complete.
- The POWER Button and all function buttons, (PLAY, FF, REW, etc.) are only operational after the tape has been completely loaded.

If you have a problem with your unit, it may be something you can correct yourself. Check the list below for symptoms and corrections.

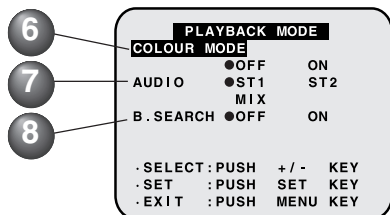
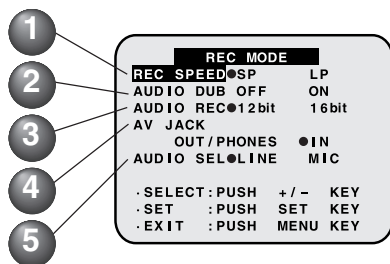
Symptom	Correction
No picture in the LCD Monitor...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 9, 10) • Make sure the POWER is set to ON. (pp. 13, 19) • Check the Dew Indicator. (p. 28) • Make sure the Battery is fully charged. (p. 9) • Make sure all necessary cables are connected correctly and firmly. (p. 10)
Video cassette cannot be inserted...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 9, 10) • Insert the cassette record tab up, window side facing out. (p. 7)
Video cassette cannot be removed...	<ul style="list-style-type: none"> • Make sure the Power source is connected. (pp. 9, 10)
No operation starts when operation buttons are pressed...	<ul style="list-style-type: none"> • Check the Dew Indicator. (p. 28)
Recording cannot be done...	<ul style="list-style-type: none"> • Make sure the record tab is closed. (p. 6) • Check the Battery Indication. (p. 31)
Sound from microphone cannot be monitored...	<ul style="list-style-type: none"> • Make sure the unit is set to REC or REC/PAUSE mode. (p. 19)
Sound cannot be heard...	<ul style="list-style-type: none"> • Make sure the Audio on the PLAYBACK MODE is set to ST1. (pp. 21, 29)

On-Screen Displays (OSD)

The following warning displays appear in the LCD monitor.

Indications	Condition
 TAPE NOT INSERTED	If this unit is in ON mode without a cassette inserted, "TAPE" will flash and "TAPE NOT INSERTED" will appear for 5 seconds. Recording will not start.
 CHECK REC TAB	If this unit is Audio dub mode or Rec mode with the cassette sliding record tab opened, "REC" will flash and "CHECK REC TAB" will appear for 5 seconds. Recording will not start.
 CANNOT REC	When Audio dub is performed and the recording is other than PAL format, "REC" will flash and "CANNOT REC" will appear for 5 seconds.
INCOMPATIBLE TAPE	When an incompatible tape is detected, "INCOMPATIBLE TAPE" will appear for 5 seconds.
NEED HEAD CLEANING	If the video heads require cleaning, "NEED HEAD CLEANING" will appear for 5 seconds.
CANNOT REC LP-MODE	When an AUDIO DUB is attempted on a pre-recorded LP tape, "CANNOT REC LP-MODE" will appear for 5 seconds.
 DEW DETECTED	If excessive moisture condenses in the unit, "WARNING" will flash, "DEW DETECTED" will appear, and this unit will automatically turn OFF in 15 seconds. In this case, wait until the indicator no longer flashes when your unit is turned ON again.
  LOW BATTERY	When a battery recharge is necessary, "WARNING" will flash, "LOW BATTERY" will appear, and this unit will automatically turn OFF in 15 seconds. (p. 31)
CLOCK BATTERY	When the built-in lithium clock battery is discharged, "CLOCK BATTERY" will appear. To re-charge the lithium clock battery, connect the AC Adaptor to this unit. Recharging takes approx. 4 hours. Reset the clock after charging.
INCOMPATIBLE DATA	If you play a tape recorded in a format other than PAL or you try to copy copy-protected data, "INCOMPATIBLE DATA" will appear.

MAIN MENU Screen

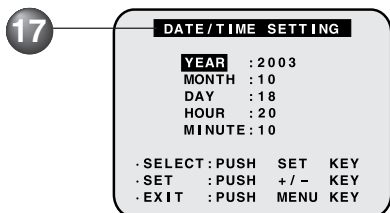
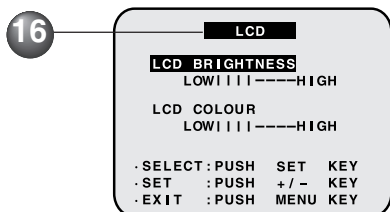
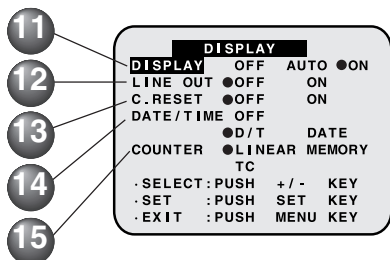
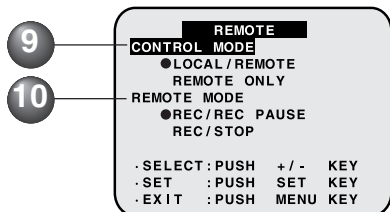


REC MODE

- 1 **REC SPEED** (p. 19)
SP : Normal recording speed mode.
LP : Recording time is 1.5 times as long as in the SP mode. For example, 120 minutes of recording is possible on an 80 minute tape.
- 2 **AUDIO DUB** (p. 21)
Set to AUDIO DUB "ON" in the Menu OSD to use the Audio Dub feature during this unit is Play Pause mode.
- 3 **AUDIO REC** (p. 20)
12 bit: The sound is recorded in the 12 bit/32 kHz mode.
16 bit: The sound is recorded in the 16 bit/48 kHz high-quality mode.
- 4 **AV JACK** (pp. 16, 19~24)
To designate the A/V terminal as IN or OUT.
- 5 **AUDIO SEL** (pp. 19~21, 23)
To select LINE or MIC as the sound input when recording. (AV JACK should be IN to select.)

PLAYBACK MODE

- 6 **COLOUR MODE** (p. 15)
Select OFF to playback in black and white.
- 7 **AUDIO** (p. 21)
To select the desired audio playback mode after performing audio dubbing in the 12 bit mode (SP mode only).
ST1 : The original sound alone is played back.
ST2 : The dubbed sound alone is played back.
MIX : The original sound and the dubbed sound are played back together.
- 8 **B.SEARCH (Blank Search)** (p. 17)
Select ON to go directly to a blank portion of the tape.



REMOTE

- 9 CONTROL MODE**
Selecting LOCAL/REMOTE allows operation to be done at the unit and remote control. Selecting REMOTE ONLY allows operation at the remote control. Only the MENU Button, VOL +/- Button and POWER Switch will function at the unit.

- 10 REMOTE MODE**
To assign the functions of the remote control button (REC/REC PAUSE or REC/STOP).

DISPLAY

- 11 DISPLAY** (p. 32)
To select the desired type of display on the LCD Monitor.
- 12 LINE OUT** (p. 16)
Set to ON to display the OSD screen on your TV monitor, etc.
- 13 C.RESET** (p. 32)
Setting to ON resets the counter to zero. (COUNTER should be LINEAR or MEMORY to select.)
- 14 DATE/TIME** (p. 31)
To select the desired type of display on the screen.
- 15 COUNTER** (p. 32)
To select LINEAR, MEMORY, or TC (Time Code) as the Counter indication.

LCD

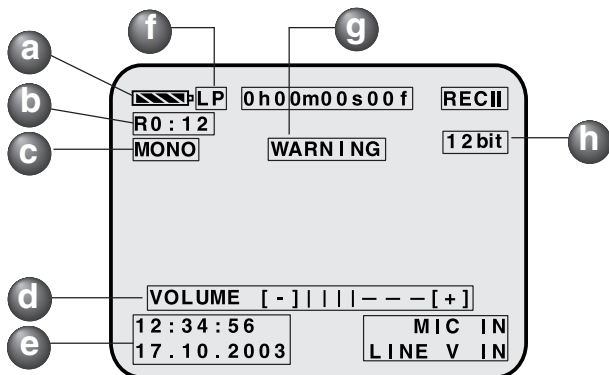
- 16 LCD** (p. 14)
To display the menu for adjusting the LCD brightness and colour level.

DATE/TIME SETTING

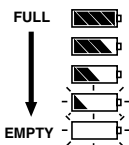
- 17 DATE/TIME SETTING** (p. 11)
The date and time can be set.

LCD Monitor Indications

Here are some of the basic indications which will appear on the LCD Monitor. Only Date and Time indications will be recorded onto the tape.



a Battery Remaining



b Tape Remaining

(30 minutes) (60 minutes)



- It will take several seconds for the tape remaining indicator to operate after the tape starts moving.

c Colour Mode (Menu OSD: p. 29)

This display appears when OFF is selected in COLOUR MODE menu.

d Volume Display (p. 14)

The volume bar appears when the volume of the built-in speaker is being adjusted.

e Date and Time Indication (Menu OSD: p. 30)

As shown right, the date and time indication changes each time DATE/TIME is selected from the unit's MENU. (Menu OSD: p. 30)

f Tape Speed Indication

(Menu OSD: p. 29)

Indicates the tape speed (SP or LP).

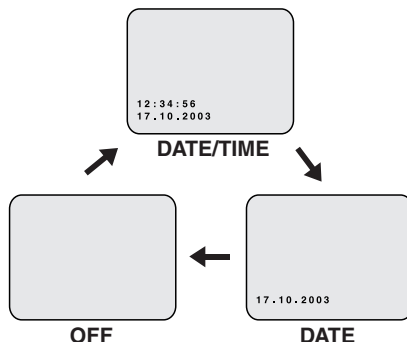
g WARNING Indication (p. 28)

The warning displays appear in the LCD monitor.

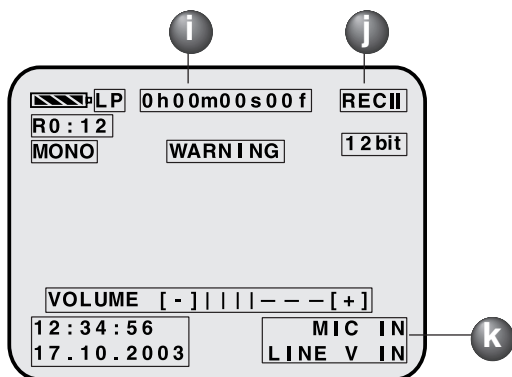
h Rec Audio Mode Indication

(Menu OSD: p. 29)

Indicates the rec audio mode (12 bit or 16 bit).



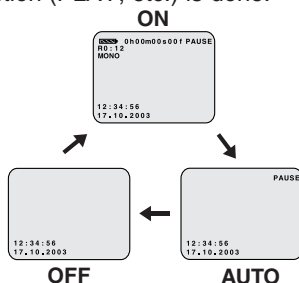
LCD Monitor Indications



i Display ON/OFF/AUTO and Counter/Time Code

The indication switches as shown below when the desired "DISPLAY" mode is selected from the menu. (Menu OSD: p. 30)

- In AUTO, the Tape Mode Indication appears for 5 seconds only when the action (PLAY, etc.) is done.



Memory Counter M 0:00.00

This unit will stop whenever it reaches the point where the counter was previously set to M 0:00.00 during audio dub, fast forward, or rewind.

Time Code 0h00m00s00f

This unit calculates and displays exactly where you are on any tape in terms of hours, minutes, seconds, and frames (25 frames = 1 second).

- This display cannot be reset.

IMPORTANT NOTE:

- C.RESET does not work when COUNTER is set to TC.

j Tape Mode Indications

REC	Recording.
REC II	Paused during recording.
>	Playback.
II	Still.
STOP	STOP
III>	Frame Advance (forward).
<<II	Frame Advance (reverse).
FF	Fast forward.
REW	Rewind.
>>>	FF Search.
<<<	REW Search.
BLANK	Blank Search.
A.DUB	Audio Dubbing.
A.DUB II	Audio Dubbing Pause.

k Input Mode Indications

Input Mode	Indication
AV JACK: IN AUDIO SEL: MIC	MIC IN LINE V IN
AV JACK: IN AUDIO SEL: LINE	LINE AV IN
AV JACK: OUT	DV IN
AV JACK: IN AUDIO SEL: LINE (A.DUB, A.DUB PAUSE)	LINE A IN
AV JACK: IN AUDIO SEL: MIC (A.DUB, A.DUB PAUSE)	MIC IN
AV JACK: OUT (A.DUB, A.DUB PAUSE)	MIC IN

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REC Lamp

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REC

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STOP

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+/-

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p. 20.

**Remote
Terminal**

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**A/V Output/
Input
Connector**

pp. 16, 19,
21~23.

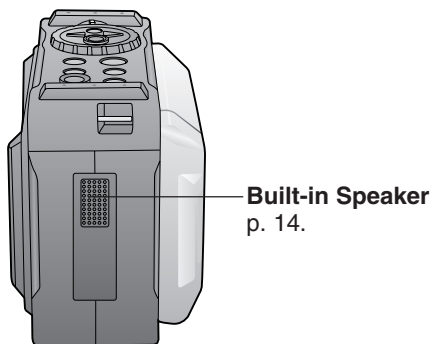
PHONE

p. 13.

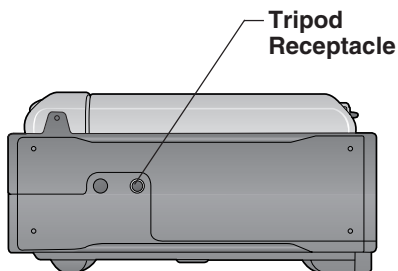
For Your Information

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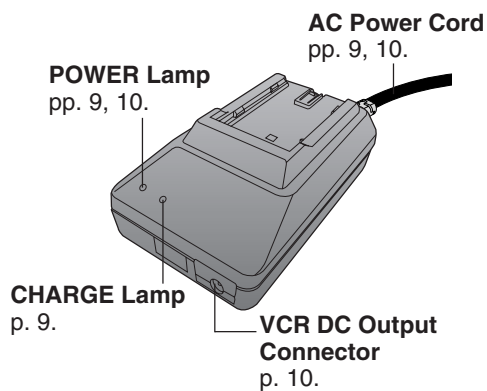
Side View



Underside View



AC Adaptor



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